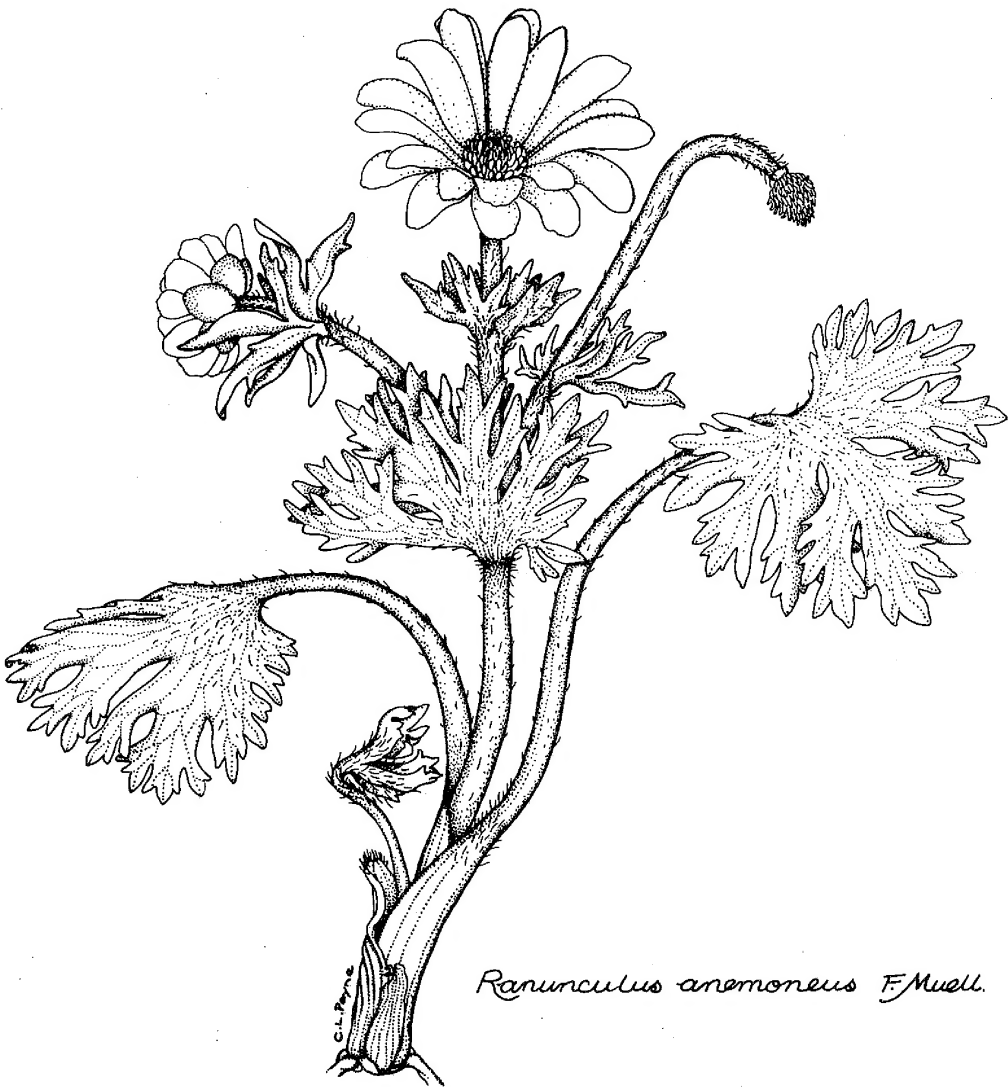




Australian Systematic Botany Society NEWSLETTER

No. 59 JUNE 1989



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'RACOSPERMA' AGAIN

L. Pedley

Queensland Herbarium, Meiers Road, Indooroopilly, Qld 4068

When proposing recognition of *Racosperma* and *Senegalia* as genera distinct from *Acacia* (Pedley 1986), I was conscious of the probable social and economic effects of such an action. An advanced draft of the paper had been circulated, much more widely than I had intended. Consequently some attitudes to the proposals had already formed before their publication. I have since defended my position (Pedley 1987a, 1987b) and am reluctant to do so *ad nauseum*. Maslin, however (1988, 1989 - one paper, despite the two places of publication and different titles), has presented at some length a contrary point of view. I appreciate that there is a contrary point of view though I do not agree with it. Some matters raised invite reply. The important ones seem to be on p. 10 ('ASBS Newsletter' edition). Failure to reply might be considered acceptance of Maslin's conclusions.

Bentham's (1875) treatment of *Acacia* is still generally accepted despite the radical treatment of Britton and Rose (1928). Sufficient evidence, some of it thin, has been presented, perhaps not always well, to demonstrate that *Acacia sensu lato* is polyphyletic. It represents two monophyletic lines: *Acacia sensu stricto* and *Racosperma/Senegalia*. The data base is incomplete, but if taxonomists were to work only from complete data bases then revisionary taxonomy and flora writing in Australia would stop for a century or so. Taxonomists make decisions on available data. Some also change their minds, not always a bad trait.

The demonstration of two monophyletic lines would be sufficient for many, even most modern taxonomists to recognise *Acacia* in the narrow sense as distinct. The handling of *Racosperma/Acacia*, however, does present problems. As Seberg (1986) observed, the limits of any monophyletic higher taxon may be extended or reduced solely by the inclusion or exclusion of its monophyletic sister group. Establishing the extent of any supraspecific taxon is merely a matter of consensus.

A consensus is therefore needed, though the one reached by some members of the International Group for the study of Mimosoideae meeting in Berlin is suspect. The meeting could hardly be held to be impartial when the main proponent for dividing *Acacia* was absent and its main opponent chaired the meeting and provided it with lengthy introductory 'comments' (Maslin 1987). Recognition of *Racosperma* and *Senegalia* appears the most acceptable procedure, though the position of *Senegalia* sect. *Filicinae* is uncertain. Generic rank, as *Acaciella*, is possible. Although I know only about half the species of *Racosperma* reasonably well I consider it a large and complex genus without obvious disjunctions. There appears to be a major division between plurinerved and uninerved species, the *Botrycephalae* group going with the latter, but the relationships of sect. *Lycopodiifolia* and sect. *Pulchella* and some individual species are not at all clear.

Justification for recognising three genera was certainly not based on what had been the approach in other plant groups or on Williams's 'Index of Diversity'. My use of Williams's index was merely to demonstrate that the division of *Acacia sens. lat.* could not be considered excessive splitting. If the *Acacieae* and *Ingeae* were combined, something I consider desirable, then the tribe would be one of low diversity similar to the *Cassieae*.

The validity or otherwise of the name *Racosperma* has absolutely no bearing on the taxonomic treatment of *Acacia*. I have no doubt that the name is valid, but if deemed otherwise, then four names published by Rafinesque in 1838 are available for the genus. Combinations can be made as easily under *Zigmaloba* as they are under *Racosperma*. Conservation of the name *Racosperma* is also possible.

Conclusions

The treatment of *Acacia* (Pedley 1986) is a reasonable and responsible interpretation of available evidence. Following it would allow a better interpretation of phylogeny and phytogeography than the recognition of a hotch-potch *Acacia sens. lat.* More data and less polemics are now needed. Until the results of studies proposed in Berlin (Maslin 1987: 115-116) are published I see no further need to defend my position on *Acacia sensu latissimo*.

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A METHOD FOR RECORDING UV REFLECTANCE PATTERNS IN FLOWERS USING MONOCHROMATIC FILM

B.R. Randell⁺ and B.C. Rowland*

⁺ State Herbarium of South Australia, Adelaide.

* Botany Department, University of Adelaide

Introduction

Under funding from the Flora Foundation of Australia, a project has been set up which investigates the variation of UV-reflectance patterns in flowers of Australian native Papilionaceae. As black and white film is sensitive to these wavelengths (320-450nm) it is possible to use photographic techniques to make permanent records of patterns which are visible to insects such as bees, but are invisible to human eyes. (Wavelengths shorter than this are not visible to insects and are thus of little interest in pollination studies. They are also poorly transmitted by the conventional glass optics used in this work.)

Possible methods of approach.

1. It would be possible to record the presence of UV sensitive pigments by the use of fluorescence techniques. This relies on the direction of UV light onto the object (either from a black fluoro lamp, or from an ordinary flash gun with a filter applied which removes all non-UV wavelengths)

and the exclusion of all non-UV light by some means. This is impractical in the field as it needs a light-tight shroud and exposures are lengthy.

2. Patterns can be recorded by reflectance photography, shining white light on the object, but applying a filter to the camera so that only UV light reaches the film.

Such photographs taken with sunlight alone pose problems, as the amount of UV light is so small that very long exposures are necessary, causing problems with wind movement. Also the visible/UV light ratio varies with the time of day, and with the degree of cloud cover, and means that exposure times are hard to calculate.

However, it is possible to increase the amount of UV light reaching the object and camera, by using a normal camera flash gun. Because the flash output is constant, as is its visible/UV ratio, a constant factor can be established for the flash/camera/lens combination in use, and then reliable exposures made.

Developing and Printing.

To simplify processing of the exposed films, it is desirable to have all exposures of approximately equal density. At ASA 400, the density of the UV-photos was much less than that of the control (non-UV photos). This difference was reduced at ASA 800, and almost eliminated at ASA 1600. At this speed, exposure times are much reduced, and problems with wind-movement etc. are also much reduced.

If the density of the UV- photos is still inadequate at ASA 1600, it is possible to use a second slave flash to further increase the incident light. Alternatively, a white reflective 'tent' surrounding the camera, will also help to concentrate and soften the lighting.

Kodak T-max 400 ASA film can be pushed to 1600 ASA as it withstands 'push-processing' with little grain increase, especially when developed with T-max developer, and its wedge spectrograph indicates that while it still responds strongly towards the UV end, it has better red response than Tri-X, the film usually suggested for this work. It thus produces a more accurate tonal rendition of the control (non-UV) photographs.

If all the objects are photographed against the same background, even in the field, it is easier to obtain consistent results. The background can be cardboard or cloth, and coarseness etc. is a matter of personal choice, but cloth tends not to give problems of glare. Best results will be obtained if the background is about 18% reflective, so that it can be used in similar fashion to a gray card. Darker or lighter tones will require correction in the control photographs.

In all the photographs in this study, both control (black and white) and UV, the lens was set at f8, as this is usually sufficient to ensure adequate depth of field in the small objects being photographed.

As the object is not visible to the operator once the UV filter is placed in front of the lens, focussing for the UV shots must be done in visible light. However, it is found that the plane of focus for UV is slightly further away than that for visible light. After the first exposure in normal light, the lens must be refocussed **several millimeters in front of the object** (the exact distance can only be determined by experiment).

Due to the use of varying working distances with different sizes of objects, there will still be some variation in the exposures achieved in the UV shots. The following method enables standardisations to be made during printing.

A small tag coated with Magnesium oxide powder (MgO) is included in early UV pictures. When the tag, which is 99.7% UV-reflective, prints 'just-white' then the relativity of the various tones within the subject and the background is established. Once the reflectivity of the background has been determined, the density of each print can be kept constant by using an enlarging meter on the background prior to printing. Thus, later exposures do not need to have the MgO tag included.

Care has to be taken in preparing the MgO tag, as a mottled surface can lead to uncertainties in printing. Note that the tag does not indicate absolute reflectances of any darker (less UV-reflective) parts of the subject. A full UV-gray scale is needed for that.

In our work, the following combination of equipment was used:

Camera body: Ricoh XR-20 sp

Lens: Rikenon Macro 105mm

Filter: Hoya U-360 (permits passage of long wavelength UV light, but excludes all visible light)

Flash attachment: Metz 32 CT 3, with a white, home-made reflective hood.

The camera was mounted on a tripod, and exposures made using a cable release.

Film: Kodak T-max 400 ASA, pushed to 1600 ASA

Developer: Kodak T-max developer

Paper: Ilford multigrade

Method

In our work, three photographs were taken of each object:

1. A control photograph was taken, using T-max film at 1600 ASA, ambient light, f8, and the shutter speed indicated for the background in those light conditions.
2. A UV photograph was taken, using T-max film at 1600 ASA, with the lens refocussed, the aperture f8, shutter speed 1/125, the flash attachment engaged, the white hood in place, and the filter hand-held in front of the lens.
3. The T-max film was processed using T-max developer, and the background of the UV prints standardised using MgO and the Enlarging meter.
4. A colour photograph was taken, using the same lens attached to a second camera body loaded with colour film.

Acknowledgements

As noted above, the project is funded by the Flora Foundation of Australia, whose support is gratefully acknowledged.

REDISCOVERY OF 'MUELLERARGIA TIMORENSIS' (CUCURBITACEAE)

Ian Telford

Australian National Botanic Gardens, Canberra

A recent collecting trip to Torres Strait by David Jones of the Australian National Botanic Gardens has turned up *Muellerargia timorensis* Cogn. (syn. *Zehneria ejecta* Bailey) for the first time since 1893 when the type of *Z. ejecta* was collected on Thursday Island by E. Cowley. Earlier Australian collections are by W. Persleh from the Endeavour River in the 1880s and E. Palmer from Thursday Island in 1883. The species was recently classified as X (presumed extinct) by J.D. Briggs and J.H. Leigh, 'Rare or Threatened Australian Plants' ANPWS Special Publication. 14: 31 (1989).

NEW RECORD FOR THE PROBLEMATIC GENUS 'LEPTUROPETIUM' (POACEAE)

Ian Telford

The grass genus *Lepturopetium* Morat has been known previously only from the type collections of its two species - *L. kuniense* Morat from the Isle of Pines, New Caledonia and *L. marshallense* Fosberg & Sachet from Eniwetok Atoll, Marshall Islands.

David Williams of the Canberra CAE has recently (1986) collected *L. marshallense* from West Island, Cocos (Keeling) Islands.

F.R. Fosberg and M. Sachet, '*Micronesica*' 18: 73 (1982), postulate a hybrid origin (*Lepturus* x *Chloris*) for the genus. No seeds have been found and pollen is mostly sterile.

W.D. Clayton and S.A. Renvoize, '*Genera Graminum*', Kew Additional Series 13: 238 (1986), claim the genus to be monotypic. If so, the localities of *L. kuniense* lie over 2000-4000 km apart. Perhaps the species has been overlooked because of its superficial resemblance to *Lepturus repens* (G. Forster) R.Br.

The type locality of *Lepturopetium marshallense* on Eniwetok Atoll, Marshall Islands, is described by Fosberg and Sachet as a 'disturbed site'.

'the scene of severe fighting during World War II and of much military activity since, due to testing of atomic weapons and use as a missile-range target.'

Talk about disturbed!!

ASBS BUSINESS

REMINDER: 12TH GENERAL MEETING 28 JUNE 1989

Barry Conn

The 12th General Meeting of the **Australian Systematic Botany Society Incorporated** will be held at 6:00 pm on the 28th June 1989 at the Women's College, University of Sydney, New South Wales.

Any member wishing to place an item(s) on the agenda should have notified the Secretary (Dr B.J. Conn) in writing by the 14th June 1989.

Council Elections - 1989-1990 Term

The following nominations were received:

President	Dr J.G. West
Vice-President	Dr M.D. Crisp
Secretary	Dr B.J. Conn
Treasurer	Dr D.B. Foreman
Councillor	Dr G.P. Guymer
Councillor	Dr J. Powell

As none of the positions is contested, there will be no need for a ballot.

SUBSCRIPTIONS FOR 1989

Don Foreman
Treasurer, ASBS

At the time of writing, 1 June, 1989, over one third of members still have not paid their subscriptions for 1989 and a few still owe arrears from 1988. This is a rather disappointing response.

I would once again ask people to check the year-date at the bottom of the address label on their 'Newsletter'.

1989 means you are currently financial.

1988 means you owe subscriptions for 1989, i.e. \$20.00.

1987 means you owe subscriptions for 1988 and 1989, i.e. \$40.00.

PROPOSAL FOR AN ASBS SYSTEMATIC BOTANY RESEARCH FUND

Helen Hewson⁺ and Judy West*

⁺ Australian Biological Resources Study, PO Box 1383, Canberra ACT 2601

* Australian National Herbarium, CSIRO, PO Box 1600, Canberra ACT 2601.

Earlier this year we put forward a suggestion to Council that the Australian Systematic Botany Society set up a research fund. This will be discussed in detail at the forthcoming Council meeting and the General Meeting associated with the symposium in Sydney in June.

We suggest that the Council of ASBS consider setting up a fund for the allocation of small grants for botanical systematic research in Australia. It is clearly within the constitution of the Society to promote systematic botany and this is a contribution which we consider ASBS could constructively make to Australian systematic botany.

We suggest:

* **The main aim** of this fund would be to increase the amount of taxonomic research being done in Australia.

* **Eligibility.** Any member of ASBS would be eligible to apply for funding, but perhaps the unemployed, amateur botanists and students might be favoured? Clearly a policy would need to be developed.

* **Fields of research.** Any area of botanical systematic research would be appropriate. It would seem most applicable in those areas of research which have high priority, are very time consuming, and can be carried out with extra technical assistance. Since only small parcels of money will be available some aspects may be more suitable for funding, e.g. field work, assistance with illustrations, with mapping, etc.. Consideration also may be given to cytology, glasshouse assistance, bibliographic assistance, databasing specialist groups, and general technical backup.

* **Source of funds.** ASBS could initially invest some money in the scheme, so that the trust fund would have a core on which to build. Options for additional funding include:

- encourage donations,
- seek sponsors (many of us are on this roundabout at the moment)
- introduce a levy on each member,
- fund raising activities from lamington drives to teaching botanical courses and everything in between.

The grants should be taken from the interest earned on the capital invested. The capital would be used directly for funding only when specified by a sponsor or donor.

* **Society administration.** A committee/subcommittee would be needed to administer the fund. The membership might be, for example, ASBS President, Treasurer, one other Councillor and two other members of the Society.

A separate trust account would be necessary, and we expect that donations to it would be tax deductible.

Many scientific societies, especially those based in the US and UK, have established and administer funds or grants similar to that which we are suggesting. The Joyce Vickery Scientific Research Fund administered by the Linnean Society of NSW is an Australian example.

This proposal should be of interest to all members. We have taken the opportunity to outline it here so that you can consider the matter, and communicate your comments, feelings, suggestions, gripes or whatever, to ourselves or Barry Conn as Secretary.

PERSONAL NEWS

Robert Boden Retires

Dr Robert Boden retired on 6 April 1989 after ten years as Director of the Australian National Botanic Gardens and a career in the Australian Public Service spanning thirty four years.

Born in Sydney, he graduated from Sydney University and the Australian Forestry School in Canberra and joined the Parks and Gardens Section of the then Department of Interior in 1955 at the start of the boom years of Canberra's growth. His forestry background and his involvement with urban planning and plantings led him to undertake further studies and he was awarded a Ph.D. in 1972 for his thesis on 'Changing Land Use in the Canberra Region'.

From 1972 to 1979 he was involved in the development of new policy initiatives by the Australian Government in the field of nature conservation. He was appointed Assistant Director in the newly established Australian National Parks and Wildlife Service in 1976, a position he held until his appointment as first Director of the Botanic Gardens in 1979.

Major works undertaken at the Gardens during his term as Director included the construction of the Rockery to display smaller plants in modified soil conditions, the establishment of the Banksia Centre to provide special facilities for people with disabilities and the Visitor Information Centre with exhibition areas, a public access herbarium and a bookshop.

Dr Boden's keen interest in the conservation of endangered plant species has been instrumental in the Gardens taking a leading role in the cultivation and research into Australian plants that are rare or threatened. His knowledge of endangered species enabled him to provide valuable input as an adviser to the World Wildlife Fund both in Australia and on the international scene.

As well as his many publications on conservation he was a joint author, with Leigh and Briggs, of the book *'Extinct and Endangered Plants of Australia'* published by MacMillan in 1984.

In his retirement Dr Boden intends to put his considerable knowledge to good use as a consultant in the fields of ornamental horticulture, urban forestry and conservation.

Murray Fagg

ANBG, Canberra.

Arthur Court Retires

Arthur Court has recently retired from the position of Assistant Director at the Australian National Botanic Gardens in Canberra. He developed an early interest in ferns and orchids, particularly those of the area in which he lived, the Dandenong Ranges in Victoria. He was educated at the University of Melbourne, from which he graduated as Bachelor of Science.

Arthur commenced employment with the Department of Crown Lands and Survey, Victoria, at the National Herbarium of Victoria on 21 November 1955, taking up a position as botanist in 1957. His work lay especially in the genus *Acacia* and he collected extensively in Victoria and South Australia. He contributed the family Mimosaceae for J.H. Willis's '*Handbook to the Plants of Victoria*', as well as preparing the nomenclatural data for that work. During 1966/67 he was ABLO at Kew.

When the position as Curator of the Herbarium at the (then) Canberra Botanic Gardens became available in January 1974 he applied and was appointed to the position, becoming Assistant Director, National Collections after reorganisation late in 1983. He held that position until his retirement in January 1989.

His time at ANBG was mostly taken up with administrative duties, but his knowledge of *Acacia*, and the information about the genus he had collected together, were available to those who needed it. His advice on nomenclatural and taxonomic matters was always helpful.

Over the years of his working life he has published in '*Victorian Naturalist*', '*Muelleria*' and '*Nuytsia*'.

We wish him well in his retirement and hope that he may now be able to publish so that all may benefit from his considerable knowledge of *Acacia*.

Estelle Canning
ANBG, Canberra

* * * * *

THE EDITOR'S PASSPORT

The Editor stood 'fore the Heavenly Gate,
His features pinched and cold.
He bowed before the Man of Fate,
Seeking admission to the fold.
'What have you done', St.Peter asked,
'To gain admission here?'
'I was the Journal's editor, Sir,
For many a weary year.'
The Pearly Gates swung open wide
as Peter pressed the bell.
'Come in and choose your harp,' he cried;
'You've had your share of hell!'

Anonymous: Published in an editorial in '*The Journal of the Irish Medical Association*' Vol 42 No 247 Jan. 1958 pp. 31-32.

Thanks to Don Foreman

REPORTS

AUSTRALIAN BIOLOGICAL RESOURCES STUDY REPORT

Alex George,
Acting Director, Botany, Bureau of Flora and Fauna, Canberra

The tenth volume of the '*Flora of Australia*' - Volume 3 (Hamamelidales to Casuarinales) - was published on 24 April, ten years to the day since the formal announcement of the project. ABRS staff celebrated by indulging in a lunch cruise on the 'Lady Canberra' on Lake Burley Griffin.

Three further ABRS publications are about to hit the market. These are the '*Catalogue of the Mosses of Australia and its External Territories*' in the Flora and Fauna series; '*Fauna of Australia*' Vol. 1B; and '*Zoological Catalogue*' Vol. 7.

Meanwhile the nine families in Vol. 18 of the '*Flora*' are being typeset or are in the final editing stages.

We are still located at Acton House but preparations continue for the move to the Australian National Botanic Gardens. Roger Hnatiuk has completed the move, however, albeit in an acting capacity: following the retirement of Robert Boden, Roger is Acting Director of ANBG. Alex George is currently Acting Director, Botany, within the Natural History Branch.

'Flora 2001'

Under this title, plans are in preparation for completing the vascular '*Flora of Australia*', i.e. Vols 1-50, by the year 2001, that year being the Centenary of Federation. The proposal has been discussed at most major herbaria and for others has been provided as a discussion paper. In essence, it proposes increasing the rate of publication to three volumes per year by 1991 and four per year by 1997. In particular, support will be sought for additional flora-writers. They will both write text as contributors and assist specialists to complete manuscripts. Resources will be needed to support more illustrators. Support will also be sought either for travel by contributors to herbaria or for the additional work involved in processing loans to and from herbaria.

The proposal has received widespread support from the taxonomic community, always with the proviso that additional resources must be found to support the increased rate of writing and illustrating needed. In order to obtain that support, discussions are in hand within our Department prior to seeking sponsorship. We are optimistic that a fair proportion of what is needed can be found. If so, we will come close to meeting the outer limit of the original schedule of 15-20 years for completing the vascular '*Flora*'.

In order to assist planning, a list has been circulated among herbaria of the families in the remaining volumes with a request for expressions of interest in contributing the outstanding groups. Once these are combined we will be able to assess what groups remain unaccounted for. Taken in conjunction with a proposed sequence of publication, we can then plan for the additional writing resources needed and can incorporate the 'gaps' into the ABRS granting program for the next decade.

Anyone who has not seen this list but is interested in contributing to the remaining volumes of the '*Flora*' should write setting out their interest in particular families or genera. If more than one person expresses interest in the same group, discussions will be arranged to resolve how it can best be prepared. Letters should be addressed to the Executive Editor, *Flora of Australia*, ABRS, GPO Box 1383, Canberra, ACT 2601.

Work will continue on the non-vascular flora. Currently text is in preparation for the bryophytes and for two volumes of lichens. It is hoped to have further discussions in 1989-90 on the fungi and algae.

MELBOURNE CHAPTER PROGRAM FOR 1989

David Albrecht and Trevor Whiffin
Conveners

Meetings are at 6.00 pm on the first Thursday of the month, at the National Herbarium of Victoria, Birdwood Ave, South Yarra, in the Astronomer's Residence (red brick building in annexe area).

- Thursday April 6 'Systematic studies in Aizoaceae', Volker Bittrich (Hamburg Uni./MELU)
- Thursday May 4 'Was there a "great Australian arid period"?', Peter Kershaw (MONU)
- Thursday June 1 'Taxonomy of Australian *Laccaria*', Tom May (MONU)
- Thursday July 6 'An alternative view of the taxonomy of Australian Casuarinaceae, based on analyses of seedling morphology and allozymes', Yee H. Hwang (MONU)
- Thursday August 3 'Aspects of the biology and taxonomy of marsupial liverworts', Karen Beckmann (MONU)
- Thursday September 7 'Plant houses for Arthropod mutualists', Dennis O'Dowd (MONU)
- Thursday October 5 'Aspects of the phytogeography of Australian rainforests', Trevor Whiffin (LTU)
- Thursday November 2 'Pollination biology of *Pterostylis*', Robyn Watson (MELU)
- Thursday December 7 'Variation in *Microseris scapigera*', Yvonne Fripp & Melinda Andrews (LTU)

VISITORS ARE WELCOME

Enquiries to:- David Albrecht (650 9424) or Trevor Whiffin (479 2274)

CANBERRA CHAPTER NEWS

Lyn Craven
Convener

The following meetings have been held so far this year:

Tuesday 17 January

Bob Johns (University of Technology, Lae) '*Asplenium* and *Diplora* in Papuaia: Use of perispore morphology in taxonomy of the Aspleniaceae'. Bob gave the meeting an insight into the fascinating world of Pteridology, an area in which few of us have expertise.

Thursday 23 February

Roger Hnatiuk 'The correct spelling of plant names'. The title may sound bland but, as might be expected from taxonomists, the discussion soon became polarised although a majority of people believed that the original spelling should be retained with allowance for limited changes, such as those required for agreement in gender.

Thursday 13 April

Judy West 'Experiences of spending the bicentennial year at Kew'. Judy shared with us some of the things which made her time at Kew so memorable.

Before Judy's talk, Alex George gave the meeting an outline of the plans to complete publication of the *'Flora of Australia'* by the year 2001.

Thursday 4 May

Roger Hnatiuk 'Taxonomic databases: Are we building a Tower of Babel?' The need for standards in the various databases which are in the process of development around the world was discussed by Roger. The importance of being able to readily integrate databases and/or subsets of data should be kept in mind.

Thursday 18 May

Helen Hewson 'A tightrope walking act: A flora writer's experiences with the Lythraceae'. Using the Australian representatives of Lythraceae for examples, Helen gave a very thought provoking talk on the role of a flora writer in the *'Flora of Australia'* project. The work requires skills not only at extracting the flora treatment from a comprehensive published account, but also at doing an original research study for a taxon not touched since Bentham's time, and at every possible combination in between.

BOOK REVIEWS

Norst, Marlene J. (1989). **Ferdinand Bauer. The Australian Natural History Drawings.** 120 pp. Lothian Publishing Company, Melbourne. Retail price \$29.95.

In 1976 I attended at AD a promotion for the book *'The Australian Flower Paintings of Ferdinand Bauer'*, edited by W.T. Stearn and W. Blunt and published by Basilisk Press. I was suitably impressed by the contents but, as a student, far from impressed with the price - \$300 or was it \$500? I still have reservations about books which are clearly intended for collectors and libraries alone. And I'm still equally impressed by the splendid art work of Ferdinand Bauer, an admiration reinforced following the viewing last year of the museum display 'First Impressions', which incorporated some of Bauer's original works. The book *'First Impressions'*, by Margaret Steven, which accompanied the display contains a number of illustrations of Bauer's work, as does Mabberley's *'Jupiter Botanicus'*. But I've often wished to see more of his illustrations and have wondered about his unpublished work and original sketches. I was therefore pleasantly surprised to see the above work adorning the shelves of my local bookshop. I quote from the introduction:

'The present volume is a first attempt to introduce Ferdinand Bauer's work to a wider public. Since it is his Australian drawings that will allow Australians the readiest access to his art, the illustrations have been selected from the Investigator voyage. Most of them have never been published before. After his death the finished water colours of the Australian journey went to the Natural History section of the British Museum while the pencil sketches were acquired by the Imperial Natural History Museum in Vienna. In the pages of this book they have, for the first time since Bauer worked on them, been reunited. It is thus possible in some instances to see how he developed a drawing from the basic sketch covered with a numeric code to indicate nuances in colouration, to the final masterpiece.'

The book is not just one of illustrations but includes what is clearly a well-researched, well-referenced biography which is of use to taxonomists. It commences with Bauer's development as a botanical artist under the guidance of Norbert Boccus and later Baron Nicolaus von Jacquin, and then deals extensively with the Australian voyage, including the production of final works on return to England. The main text by Norst concludes with two chapters, one detailing Bauer's life in Austria, the other discussing Bauer's personality. The basis of the biography is formed from John Lhotsky's article in *'London J. Bot.'* and is supplemented by accounts such as those by Peter Good and Matthew Flinders of the trip along the Australian coast. Use is also made of various letters, including the ten letters Bauer is known to have written from Australia. The letters are also presented in their entirety in the appendix.

Seven of the letters, translated from German, were to Franz Bauer, another was sent to Josef Bauer. Two more, in English, were sent to Joseph Banks. Photographs of parts of two of the original letters, one in English, one in German script, are reproduced, thus providing a useful source for anyone seeking a sample of Bauer's handwriting.

As a non-biologist the author acknowledges the help of a considerable number of experts in the natural history aspects of Bauer's work, among them Mrs Christina Riedl-Dorn of the Department of Botany, Natural History Museum, Vienna who contributed a chapter on the Vienna drawings.

Full page coloured illustrations (276 x 219 mm) of the following plants are presented in the book: *Allocasuarina torulosa*, *Banksia pulchella*, *B. speciosa* (back cover), *Brunonia australis*, *Calochilus paludosus*, *Cephalotus follicularis*, *Cycas media*, *Flindersia australis*, *Kunzea baxteri*, *Leschenaultia formosa*, *Livistona humilis*, *Petalostigma quadriloculare*, *Pityrodia saliaefolia*, *Pleiogynium solandri*, *Thelymitra ixioides* and *Wickstroemia australis*. Smaller, named, colour drawings of *Bossiaea dentata*, *Callicoma serratifolia*, *Eucalyptus lehmannii*, *E. pruinosa*, *Grevillea banksii*, *Hibbertia dealbata*, *Lomandra hastilis*, *Myristica insipida* and *Stylidium scandens* are also presented. There are also colour drawings of a few plants such as *Hovea longifolia*, *Keraudrenia hookeriana* and *Cymbonotus lawsonianus* scattered through the text - but these are unnamed. Uncoloured final drawings and/or original sketches of plants included in the book are of *Allocasuarina torulosa*, *Ehretia acuminata*, *Euphorbia glauca*, *Pityrodia saliaefolia*, *Pomaderris myrtilloides*, *Stackhousia spathulata*, *S. viminea*, *Streblotrichia speciosa*, *Thelymitra ixioides* and *Zehneria baueriana*.

Of the animals the only full-page, colour illustration is of a rock-wallaby. Perhaps the most impressive animal drawing is that of the blue swimming crab - the colour plate is presented plus the intricately numbered sketch from which the final water colour was produced. As with the plants there are some unnamed animal drawings scattered through the text, e.g. of the golden bell frog and of the weedy sea dragons. The latter is a particularly endearing portrait and I only wish that a full colour page had been devoted to it.

The layout of the book suggests that names were deliberately omitted from some illustrations, with the figures being distributed to give nothing more than a decorative effect and to promote an appreciation of Bauer's art work. If so, then I think this has been achieved, but I would have preferred to have seen all but the most minor illustrations clearly labelled - even though the names of illustrated, unlabelled organisms are included in the index.

I've noted a few mistakes or peculiarities in the text, e.g. the use of 'herbariums' (p. 9) instead of 'herbaria', '*Eucalyptus lehmannii*' (pp. 36, 119) instead of '*Eucalyptus lehmannii*', '*Drosera pygmaea*' (p. 119) instead of '*Drosera pygmaea*' and 'Tamor wallabies' (p. 28) instead of 'Tamma wallaby'. The spelling 'Tamor' may have been used by Flinders but it is not clear from the text. On p. 10 reference is also made to 'Dr Jan Lhotsky'. This is not a mistake, he was baptized Jan, but he is more commonly known as Johann or John Lhotsky.

Although it would have increased the cost I would have preferred to have seen a hard, not a soft cover for the book. I would also have liked to have seen a note about the author incorporated in the work.

Of the colour illustrations presented in the book I've noticed that seven of these were included in '*First Impressions*' and two of these, of the platypus and *Cycas media* were also included in Ann Moyal's recently published '*A bright and savage land*'. Some, such as that of *Cephalotus follicularis* are also produced in '*Jupiter Botanicus*'. Despite this most of the illustrations contained in the book are not readily available elsewhere - certainly not at this price. The author, and indeed the publisher, are to be commended for making this work available to the general public.

Philip Short

Royal Botanic Gardens and National Herbarium of Victoria

Chippendale, G.M. (1988). **Eucalyptus, Angophora (Myrtaceae). Flora of Australia.** Volume 19. 542 pp. Canberra, Australian Government Publishing Service. ISBN 0-644-05866-8.

This is the ninth and largest volume of the '*Flora of Australia*' published. To me it represents both a commendable achievement and a disappointment.

In this work George Chippendale has truly produced his *magnum opus*, the culmination of a long and successful career in writing published works on eucalypts for general readership. Like countless others, I am personally indebted to George for providing an opportunity to tackle the identification of eucalypts through his easily used and well presented books. A well-worn copy of his '*Eucalypts of the Western Australian Goldfields*' remains within easy reach of my work bench. It was an essential primer when I didn't know the difference between a *macrocarpa* and a *microtheca*, and the nearest active eucalypt taxonomist was 3000 km away.

The '*Flora of Australia*' volume similarly will be useful for a short time. Nowhere else can one find in the same book illustrations of the buds and fruit, maps, nomenclatural details, information on types and other specimens, descriptions, keys and brief discussions of almost all eucalypt taxa described up to January 1987. Some 513 species of *Eucalyptus*, 7 of *Angophora*, 44 infraspecific taxa, 136 presumed hybrids and 64 doubtful names are treated. The logistics of acquiring, absorbing, writing and proof reading such a massive body of information are formidable indeed.

The presentation of the finished product is a credit to the author and to editorial staff in the Bureau of Flora and Fauna. I could find few mistakes in this arena worthy of note, although errors noted on cursory examination include an incorrect caption on colour Figure 6 (*E. wandoo* is illustrated, not *E. accedens*), the buds in Figure 72i are of *E. redunca* var. *subangusta* not of *E. xanthonema* and *E. rhodantha* var. *petiolaris* has been overlooked on page 271.

The disappointments of Volume 19 are threefold. Firstly, it lacks the critical insights of an author actively involved in the current upsurge of taxonomic research on eucalypts. In identifying major groups, for example, the value of readily used characters such as number of rows of ovular structures or presence of a scar left by dehiscence of the outer operculum from the bud has been overlooked or ignored in the construction of the keys. This creates many problems in the Key to Groups, where the author attempts to key out 20 artificial groups on the basis of bark characters, fruit size, operculum/hypanthium length ratios etc. While useful at or near the species level, such characters are so variable when considering all eucalypts that the keys provide real difficulties to the uninitiated.

While on major groups, the big question of generic or subgeneric rank for taxa of eucalypts is not discussed, but support for retention of *Eucalyptus sens. lat.* is evident in the formal treatment throughout. Ample published material is available on this question in the works of Pryor and Johnson, Carr and Carr, and Ladiges and Humphries. It would have been useful in a major authoritative work like Volume 19 to address the issue and explain why the *status quo* was followed. As it stands, the reasons why such a strong push to publish this volume was made at such a critical stage in the history of work on generic relationships will no doubt be the subject of much botanical campfire speculation.

The lack of a critical edge is also evident at lower levels in the classification. For example, series are formally recognised 'based on an assessment of those informally given by Pryor and Johnson (1971) as well as more recent publications of various authors'. Thirty-seven new series are named by Chippendale. Yet no key is provided to the series recognised, an inconsistency with editorial requirements for other '*Flora*' volumes. The reader is forced to compare descriptions and accompanying brief discussions in the search for diagnostic characters. In some cases, singularly important characters are not mentioned, or are cited in the description but omitted from the synoptic discussion (e.g. the unique subspherical smooth seeds of *E. ser. Levispermae*).

At the species level, a similar *modus operandi* is often seen. No mention is made of variation in major species complexes currently lumped under names such as *E. oleosa*, *E. foecunda*, *E. falcata*, *E. redunca* or *E. eremophila*. In the case of *E. redunca*, moreover, four named varieties are relegated to

synonymy under three different species with comments to the effect that they may on further study be worth recognising as subspecies or species. Surely if this is so they should be left as varieties, rather than condemned to obscurity as synonyms. Innumerable decisions of this kind are made throughout the work, most without comment or justification.

The presentation of falsifiable evidence for taxonomic decisions is an essential requirement for all *'Flora'* authors if they wish to claim a scientific basis to their work. It can be done even within the tight space constraints of the *'Flora'* format. It only takes a sentence to highlight diagnostic features of a taxon or to explain the evidence underpinning why a synonymy has been effected. This is one area of editorial policy that needs tightening up, in my view, since inconsistencies are rife among treatments in the volumes published so far.

The presentation of unsubstantiated taxonomic conclusions in Volume 19 highlights a second major disappointment. Rather than convey a sense of the tremendous scope for future taxonomic research and current activity in the field, the work gives the impression that most problems in eucalypt taxonomy have been resolved. Yet within a few years hence, it is likely that 100+ new species will be named and the seminal work of Lawrie Johnson and colleagues establishing new genera will be published.

My third disappointment stems from the second and revolves around the decision to publish Volume 19 prematurely. One wonders why the rush, particularly when so many other volumes were and are available to choose from. With so much in the way of additional formal taxonomy on the near horizon, plus the imminent publication of the second volume of Brooker and Kleinig's *'Field Guide to Eucalypts'*, Volume 19 would have the greatest built-in obsolescence of any volume of the *'Flora of Australia'* published so far.

To summarise then, I have the highest regard for George Chippendale's ability to compile such a major work. Had it been published five years hence, and with the collaboration of such experienced and active research taxonomists as Ian Brooker or Lawrie Johnson, we would have had an outstanding and long-lasting contribution. As it is, Volume 19 is a useful reference to the specialist interested in information on types, synonymy etc., and who knows eucalypts well enough to not have to use the keys. It has a short shelf-life, however, and I would not recommend this book as a first choice to identify an unknown eucalypt. Brooker and Kleinig's field guides and the primary taxonomic literature are more useful for most taxa.

S.D. Hopper

Department of CALM, WA Wildlife Research Centre, Wanneroo WA

Blackall, W.E. and Grieve, B.J. (1988). **How to Know Western Australian Wildflowers. Part I.** Restructured and Revised. Second Edition. University of Western Australia Press.

Since Part I of *'How to Know Western Australian Wildflowers'* was published in 1954, there has been an expansion of taxonomic work resulting in the recognition of many new species. At the same time, the upsurge in public interest in conservation matters and the increased awareness of our unique flora has led to a demand for information on plant identification. So it is good to see an updated edition of the first part of this most useful book.

The original format suggested by Dr Blackall and completed by Professor Grieve proved to be successful and this has been followed in the second edition. The explanatory figures on inflorescences, flower structure and leaves and the accompanying glossary of terms enable interested people with a limited botanical background to use the keys to families, genera and species. The keys themselves are clearly set out and easy to follow so that the reader, with some practice and attention to detail, should soon find 'keying out' a reasonably rewarding exercise.

In this new edition Professor Grieve has added brief descriptions of each family and as each species appears in the keys, additional line drawings of diagnostic features of leaves, flowers and fruits have been provided as well as short notes on habitat, distribution and flowering time. There are other useful notes referring to closely related species or possible variations which may cause confusion and lead to incorrect identification. However, the photographs which appear with the line drawings are not always clear, many being too dark, too small or lacking in contrast to be useful.

At the beginning of the book are fourteen excellent colour plates featuring over one hundred photographs, mainly of members of the family Proteaceae. It is a pity that so few of the other families covered in Part I were included. Unfortunately reference to the plants in the plates is not made at the points at which they appear in the keys. The reference could easily be included with the other notes and then the reader could immediately turn to the appropriate plate and obtain an additional check on the identification.

In the section 'How to Identify an Unknown Species' Professor Grieve takes for his example a flower which cannot be identified to genus or species in Part I. Surely it would have been logical to select a member of the family Proteaceae or another family covered by Part I. Many of his readers will possess Part IIIA as required for this exercise but younger students or newcomers to plant identification may not.

The section on 'Aids to Identification' sets out many distinguishing features of plant families and genera and provides possible short-cuts to identification. There are excellent notes on naming of plants, including some comments on the reasons for name changes, a contentious issue which is equally irritating to field botanists and amateurs.

The book is recommended to all who are interested in naming the plants they see in the bush, not only botanists but all field workers, bush walkers and enthusiastic amateurs as well. The more we learn about our native plants and animals the easier it becomes to present a logical argument for conservation of particular pieces of land.

Mrs Helen Lee

Latrobe University

NOTICES

ADU Algal Herbarium Transferred to AD

The ADU Algal Herbarium has now been transferred to the State Herbarium (AD), Botanic Gardens, Adelaide, with a small teaching herbarium of duplicates being retained in the Department of Botany, University of Adelaide.

The herbarium comprises:

- 1 Herbarium sheets numbered 1 to almost 60,000. With many numbers having one to several duplicates, the total number of sheets is probably 75,000 to 80,000. The collection is arranged in systematic order, with a card index to genera.
- 2 A wet-stack research collection of some 4,000 tubes (1" diameter), preserved in 70% alcohol with 5% glycerine. All tubes bear numbers and data corresponding to the herbarium sheets.
- 3 A slide collection numbering just over 11,000, mounted in Karo, and cross-numbered to the herbarium sheets.

Transference of the Algal Herbarium to the State Herbarium was arranged in 1978, following recommendation by H.B.S. Womersley and E.M. Wollaston to the Department of Botany and approved by the University. Within the University, protection of the collection was reasonably good since the building was 'fire resistant', but the State Herbarium has both direct (halon) fire protection and also is considered to have statutory responsibility to safeguard collections (which the University does not have).

The State Herbarium was able to offer satisfactory housing for the Algal Herbarium (the ADU seagrasses have also been transferred) and good office and research space to H.B.S. Womersley for continuing research (with ARC assistance) on Part III of the *Marine Benthic Flora of Southern Australia*.

The Algal Herbarium was commenced in 1946, using a few hundred unsorted sheets in the Department of Botany. The numbering system commenced with A1 for an *Enteromorpha* and was built up largely on the basis of the Womersley collections. The great bulk of the collections is from southern Australia, but significant collections from S. Africa, E. Africa and the Seychelles, and numerous exchange collections from many parts of the world. The A.... series of numbers will continue in AD for the algae.

Unfortunately this herbarium has very few sheets of W.H. Harvey, D.W. Sonder, or other early collectors, although nearly all southern Australian types of these authors have been checked and in many cases 'homeotype' sheets from ADU were so designated in 1952. For old algal types etc., MEL (in particular) and NSW are more important herbaria.

The collection is housed in corrugated cardboard boxes in the AD manner. Three front-opening boxes fit on each shelf, with labels on the outside, and individual sheets are in species folders (for each state as revisions proceed) within manila folders for genera (or common species). Types are currently within marked folders at the start of each species. Each box is numbered and a generic card index to the numbers is maintained. For some years, virtually acid-free mounting paper and folders have been used, and data is neatly printed in Indian Ink directly onto the mounting sheet.

The personal reprint collection and phycological library of H.B.S. Womersley are with him at AD, and will remain there. Perhaps one day it will be used by a staff phycologist. Access to this literature is available to research phycologists under normal borrowing rules.

The rich AD algal collections are available for study by research phycologists, and it is hoped they will be used wherever appropriate. As generally recognised, if collections are borrowed to supplement the researcher's own collections and when taxa have been more or less defined, the normal 12 month loan period is usually adequate. Wet-stack material is best checked in AD by the particular researcher, as are relevant slides, but both are available on loan. Loans for the use of students must be made through a tenured staff member.

When slides are made from any loan material, it is required that they be returned to AD for addition to the slide collection. Slide numbers will then be given to them and incorporated on the sheets. Slides of selected material can be retained by the researcher with approval from the Honorary Curator, Algae.

Well prepared collections (with full data) of marine algae are most welcome for the AD herbarium. Type specimens of newly described southern Australian species (and from elsewhere) are particularly welcome, as are voucher specimens from surveys.

Assistance can usually be given for identification, provided a well prepared specimen is available for AD.

The distribution of sets of 'Marine Algae of southern Australia', of which some 316 species have been sent to 24 Australian and overseas herbaria, will continue as material accumulates.

Citation of all specimens should in future refer to AD, not ADU, as the herbarium where they are deposited.

Requests for loans should be made to the Chief Botanist (Dr J.P. Jessop) at the State Herbarium, Botanic Gardens, North Terrace, Adelaide, SA, 5000, though enquiries re material available can be made to the Honorary Curator, Algae. All loans should be acknowledged in relevant publications.

H.B.S. Womersley

J.P. Jessop

Hon. Curator, Algae

Chief Botanist

State Herbarium, Botanic Gardens, North Terrace, Adelaide, SA 5000

Recent Moss Collections at the Queensland Herbarium

The collecting of mosses by collectors resident in Queensland does not seem to have been popular in the past. There are several reasons for this, most notably the lack of literature and the difficulty in obtaining identifications. As a result of this lack of interest, there have been very few collections of mosses incorporated into the Queensland Herbarium until the 1980's. While it may seem hard to believe, until recently, there appeared to be no moss collections from the Cook district since Bailey ascended Bellenden Ker last century!

From time to time, moss taxonomists visit and go to well known places such as Lamington National Park, the Atherton Tableland or various National Parks. These areas are probably quite well collected, but the specimens are in southern or foreign herbaria. Other areas outside of the 'botanical tourist spots' are not at all well collected, and in most cases are not collected at all.

As a part of general collecting for the last 8 or so years, I have made a point of including fertile material of mosses. These have been incorporated, but usually not identified, at the Queensland Herbarium. Approximately 590 collections have been made from the following regions.

Cook District:	83 (mainly from the Atherton Tableland, especially Mt Lewis and Lamb Range; a few from far north Cape York Peninsula, where there aren't many anyway)
North Kennedy District:	3
Port Curtis District:	5
Leichhardt District:	7
Burnett District:	66 (mainly from araucarian microphyll vine forest and semi-evergreen vine thicket)
Wide Bay District:	104 (mainly from araucarian microphyll vine forest and semi-evergreen vine thicket)
Darling Downs District:	9
Moreton District:	230 (mainly from araucarian microphyll and notophyll vine forest and semi-evergreen vine thicket)
New South Wales:	83 (mainly from complex notophyll vine forest south of Wilsons Peak - The Head area)

Perhaps there are moss taxonomists somewhere who would be interested in this material. It would be possible to obtain material on loan from the Queensland Herbarium through the usual channels, but because most of the material is unidentified, it would greatly assist if the loan recipient first visited the herbarium and sorted out the collections required for further study.

P.I. Forster

Botany Department, University of Queensland, St Lucia, QLD 4067

Back Issues of Serials

Don McGillivray has the following publications for sale:

ASBS Newsletter No. 1 (1974) - No. 58 (1989);
Australas. Herb. News No. 1 (1947) - No. 14 (1954), excluding No. 13, (No. 9 photocopy);
Austrobaileya 1(1) 1977 - 2(5) 1988;
Brunonia 1(1) 1978 - 3(1) 1980;
Contr. Herb. Austral. No. 1 (1972) - No. 23 (1976), excluding No. 2;
Contr. Qld. Herb. No. 1 (1968) - No. 20 (1977);
Muelleria 1(1) 1955 - 6(6) 1988;
Nuytsia 1(1) 1970 - 5(3) 1986;
Proc. Linn. Soc. NSW 90(1) 1965 - 108 (1/2) 1985 excluding vol. 93;
Research Notes WA Herb. No. 1 (1978) - No. 12 (1986), excluding No. 5;
Taxon 14(1) 1965 - 34(4) 1985;
Telopea 1(1) 1975 - 3(2) 1988;
 'Flora of Australia' vol 29 (1982);
 Gilbert, L. (1986), 'The Royal Botanic Gardens, Sydney';
 Marchant, N.G. et al. (1987), 'Flora of the Perth Region'. 2 volumes.

Please phone (02) 634 1948 or write to D.J. McGillivray, 2 Coonardoo Place, Castle Hill NSW 2154.

LETTER TO THE EDITORS

Dear Editors

Wishing to see an example of Charles Moore's handwriting, the letter which by chance I examined in the Kew Archives may also be of interest to readers of the 'Newsletter'. It happens to illuminate a small facet of the relationship between Charles Moore and von Mueller and might perhaps assist on occasion with the recognition of von Mueller types. The letter was from Charles Moore to George Benthams and written from the Botanic Gardens, Sydney, on 19th July 1876.

Referring to specimens he has just sent to Benthams, he says:

'Hitherto the specimens of my collecting have been sent to you through Dr Mueller of Melbourne, but that gentleman has not only ceased to have any correspondence with me, but has adopted the unjustifiable course of giving in recent numbers of his Fragmenta, the credit to Carron one of my employees of having discovered the plants collected by myself, and in localities where he never was e.g. the Bellinger River. The same course has been pursued of late when any reference is made to the plants of Lord Howe's Island - in nearly every case my name is wholly ignored. This is very contemptible, and I cannot therefore have any further dealings with Mueller - but will forward to you direct, anything that I may think will interest you.'

An interesting piece of serendipity.

Yours faithfully,

Peter Green
 Honorary Research Associate
 The Herbarium, Royal Botanic Gardens, Kew.

Librarian

CLASS 2, PN 2227

\$29,604 - \$32,368

Responsible for the management of the library located at the Australian National Botanic Gardens at Black Mountain.

Duties: Under limited supervision, manage the Natural History Branch departmental library. In consultation with officers of the Natural History Branch and the Librarian in Charge, formulate, review and modify library services to meet changing needs and policies.

Qualifications: Eligible professional membership ALIA. Experience in a scientific discipline such as Botany or Zoology desirable.

Normal Public Service conditions apply.

To be eligible for appointment, applicants must be Australian citizens. However, applicants who have permanent residence status may be offered probationary appointment pending the granting of citizenship.

Enquiries should be directed to Ms Pippa Smith on (062) 74 1213. Duty statements and selection criteria are available from the contact officer.

It is in the interests of applicants to obtain the selection criteria and frame their applications accordingly.

Applicants should clearly state their full name, contact telephone number, place and date of birth and full details of relevant experience and employment history.

Applications should be forwarded to:

**The Recruitment Officer
Department of the Arts, Sport,
the Environment, Tourism and Territories
GPO Box 787
CANBERRA ACT 2601**

by 6 July 1989.

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SPORT, THE ENVIRONMENT,
TOURISM AND TERRITORIES.**

STOP PRESS

Some articles intended for this number of the 'Newsletter' arrived late - about a week after the May 31 deadline. Unfortunately they could not be included because the formatting of the 'Newsletter' had already proceeded too far to be altered. The next issue is three months away, a long time to wait if your article concerns a forthcoming event. The lesson here is clear - your contributions are always most welcome, but **please get them in on time.**

The Society

The Society is an association of over 300 people with professional or amateur interest in Botany. The aim of the Society is to promote the study of plant systematics.

Membership

Membership is open to all those interested in plant systematics and entitles the member to attend general and chapter meetings and to receive the *'Newsletter'*. Any person may become a member by forwarding the annual subscription to the Treasurer. Subscriptions become due on the 1st January.

The Newsletter

The *'Newsletter'* appears quarterly and keeps members informed of Society events and news, and provides a vehicle for debate and discussion. In addition original articles, notes and letters (not exceeding ten pages in length) will be considered. Contributions should be sent to the Editor at the address given below, preferably as an unformatted ASCII file on an MS-DOS diskette accompanied by a printed copy, or as two typed copies with double-spacing. All items incorporated in the *'Newsletter'* will be duly acknowledged. Authors are alone responsible for the views expressed.

Notes

The deadline for contributions is the last day of February, May, August and November.

ASBS Annual Membership is \$16 (Aust) if paid by 31 March, \$20 thereafter. Students (full-time) \$12. Please remit to the Treasurer.

Advertising space is available for products or services of interest to ASBS members. Current rate is \$30 per full page. Contact the *'Newsletter'* Editor for further information.

All address changes should be sent to the Treasurer or the Editor.

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Austral. Syst. Bot. Soc. Newsletter 59 (June 1989)

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